REMARKS

The period for reply to the January 4, 2010 Office Action was set to expire on April 4, 2010. A petition for a one-month extension of time and authorization to charge the fee set in 37 C.F.R. §1.17(a) is being submitted with this Amendment. With a one-month extension of time, the period for reply to the January 4, 2010 Office is set to expire on May 4, 2010. Accordingly, this Amendment is being timely filed.

Claims 5, 6 and 9-11, as presented in Applicants' September 2, 2009 communication to the U.S. Patent and Trademark Office (which was entered by Applicants' October 2, 2009 Request for Continued Examination under 37 C.F.R. §1.114), are pending in the subject application, with claims 10 and 11 being in independent form. Claims 1-4, 7 and 8 were previously cancelled without disclaimer or prejudice.

By this Amendment, claims 10 and 11 have been amended.

No new matter has been introduced by this Amendment. The amendments to the claims are supported in the original disclosure at, for example, pages 19-22 of the specification and Figure 3 of the drawings.

Entry of this Amendment is respectfully requested.

Rejection of Claims 5, 6 and 9-11 Under 35 U.S.C. §103(a)

In the January 4, 2010 Office Action, the Examiner rejected claims 5, 6 and 9-11 under 35 U.S.C. §103(a) as being allegedly unpatentable over U.S. Patent No. 5,196,928 to Karasawa et al. (hereinafter "Karasawa") in view of U.S. Patent No. 4,816,909 to Kimura et al. (hereinafter "Kimura"), U.S. Patent No. 6,466,256 to Takahashi et al. (hereinafter "Takahashi") and U.S. Patent No. 4,868,646 to Tsuji (hereinafter "Tsuji").

In response, but without agreeing to the correctness of the Examiner's rejection, independent claim 10 has been amended to recite, in clean form:

> An endoscope imaging system comprising:
> an endoscope for photoelectrically converting an optical image of a subject and outputting an image-captured signal; and
> an image processing unit, to which the endoscope is detachably connected, for processing the image-captured signal from the endoscope,
> wherein the endoscope comprises:
> an image pickup element comprising one image-capture surface constructed with a plurality of scanning lines and driven by a pickup drive signal, wherein each of the plurality of scanning lines comprise a first number of pixels;
> a drive circuit for generating and outputting the pickup drive signal to the image pickup element, the pickup drive signal having a first frequency based on the first number of pixels for sequentially reading an image signal captured on the image-capture surface of the image pickup element for every scanning line; and
> a frequency dividing circuit for dividing a clock signal, having a preset frequency and being supplied by the image processing unit, to generate:
> a driving clock signal having the first frequency to be used by the drive circuit to generate and output the pickup drive signal,
> a writing signal having the first frequency for writing the image-captured signal read from the image pickup element to a line memory, and
> a reading signal having a second frequency higher than the first frequency for reading the image-captured signal from the line memory; and
> wherein the image processing unit comprises:
> the line memory having a memory capacity capable of storing one scanning line of image-captured signals read from the image pickup element;
> an oscillator for generating the clock signal having the preset frequency; and
> a video signal processing circuit for performing video signal processing on the image-captured signals stored in the line memory and read from the line memory with a reading signal at the second frequency.

Independent claim 11 has been similarly amended.

Amended independent claim 10 is patentable over the the cited references for at least the following reasons.

Applicants respectfully direct the Examiner's attention to Applicants' arguments regarding Karasawa, Takahashi and Kimura set forth in Applicants' September 2, 2009 communication to the U.S. Patent and Trademark Office. In the January 4, 2010 Office Action, the Examiner does not address Applicants arguments regarding Karasawa, Takahashi and Kimura. Therefore, the substance of Applicants' arguments are reiterated below with respect to amended independent claim 10.

Karasawa, column 3, lines 43-45, states:

> The CCD 24 is provided with a drive signal sent from a drive circuit 25a in **an image processing unit 25** of a video processor 5a. (emphasis added)

In Karasawa, a drive signal is sent from a drive circuit in **an image processing unit** and not from a drive circuit arranged in an endoscope that is detachably connected to an image processing unit. Therefore, Karasawa cannot disclose or suggest "an image pickup element comprising one image-capture surface constructed with a plurality of scanning lines and driven by a pickup drive signal, wherein each of the plurality of scanning lines comprise a first number of pixels" and "a drive circuit for generating and outputting the pickup drive signal to the image pickup element, the pickup drive signal having a first frequency based on the first number of pixels for sequentially reading an image signal captured on the image-capture surface of the image pickup element for every scanning line," where both the image pickup element and the drive circuit are **arranged within an endoscope that is detachably connected to an image processing unit for processing the image-captured signal from the endoscope**, as set forth in amended independent claim 10.

Takahashi, column 9, lines 57-60 states:

> As shown in FIG. 7, the PLL circuit 42 includes...a frequency demultiplier 50.

Takahashi, column 7, lines 3-6 states:

> FIG. 2 shows a block diagram of a first embodiment of the **video-signal processing device** according to the present invention, which is connectable to the video processor 12 of the electronic endoscope shown in FIG. 1. (emphasis added)

Figure 2 of Takahashi shows PLL circuit 42 arranged in the video-signal processing device. Accordingly, Takahashi requires frequency demultiplier 50 of PLL circuit 42 to be arranged within a video-signal processing device and not within an endoscope that is detachably connected to the video-signal processing device. Therefore, frequency demultiplier 50 in Takahashi cannot disclose or suggest "a frequency dividing circuit for dividing a clock signal, having a preset frequency and being supplied by the image processing unit, to generate: a driving clock signal having the first frequency to be used by the drive circuit to generate and output the pickup drive signal, a writing signal having the first frequency for writing the image-captured signal read from the image pickup element to a line memory, and a reading signal having a second frequency higher than the first frequency for reading the image-captured signal from the line memory," arranged within an endoscope that is detachably connected to an "image processing unit" comprising, *inter alia*, "an oscillator for generating the clock signal having the preset frequency" as set forth in amended independent claim 10.

Kimura, column 5, lines 45-55, states:

> In order to discriminate the type of the electronic type endoscope 11, as shown in Fig. 5, a ROM 30, storing the information showing the type of the electronic type endoscope 11, is provided in the endoscope connector 18. The ROM 30 is connected to a ROM read-out circuit 31 provided in the **electronic type endoscope unit 21**, to read out the electronic type endoscope type information. (emphasis added)

The above-emphasized portion of Kimura, is a typographical error. In at least five instances, reference numeral 21 in Kimura is used to refer to an "electronic type endoscope

controlling unit." In contrast, reference numeral 21 is used only once in Kimura to refer to an "electronic type endoscope unit." Moreover, reference numeral 21 cannot refer to an "electronic type endoscope unit" because, as stated in column 5, lines 45-55, of Kimura a ROM 30, storing information on the type of electronic type endoscope attached, is read by ROM read-out circuit 31 arranged within the unit referred to by reference numeral 21. Accordingly, a person skilled in the art reading Kimura would have understood Kimura as proposing a read-out circuit provided in an endoscope controlling unit and not as disclosing or suggesting "a frequency dividing circuit for dividing a clock signal, supplied by the image processing unit, having a preset frequency to generate...a reading signal having a second frequency higher than the first frequency for reading the image-captured signal from the line memory," arranged within an endoscope that is detachably connected to an "image processing unit" comprising, *inter alia*, "an oscillator for generating the clock signal having the preset frequency" as set forth in amended independent claim 10.

Tsuji is newly cited by the Examiner in the January 4, 2010 Office Action.

Tsuji, as presently understood by Applicants, describes an electronic endoscope 1 including an image pickup unit 20 disposed within a distal end 2 of a flexible insertable portion 3 thereof. As shown in Figure 2 of Tsuji, image pickup unit 20 includes a solid-state image sensor 13 and a circuit substrate 14 provided with a drive voltage generator circuit 21. Solid-state image sensor 13 is provided with a drive voltage by drive voltage generator circuit 21.

Tsuji was cited by the Examiner as allegedly disclosing an endoscope for photoelectrically converting an optical image of a subject and outputting an image capture signal, and an image processing unit, to which the endoscope is detachably connected, for processing the image captured signal from the endoscope.

Tsuji fails to disclose or suggest the above-identified deficiencies of Karasawa, Takahashi and Kimura. In particular, Tsuji fails to disclose or suggest "a frequency dividing circuit for dividing a clock signal, having a preset frequency and being supplied by the image processing unit, to generate: a driving clock signal having the first frequency to be used by the drive circuit to generate and output the pickup drive signal, a writing signal having the first frequency for writing the image-captured signal read from the image pickup element to a line memory, and a reading signal having a second frequency higher than the first frequency for reading the image-captured signal from the line memory," arranged within an endoscope that is detachably connected to an "image processing unit" comprising, *inter alia*, "an oscillator for generating the clock signal having the preset frequency" as set forth in amended independent claim 10.

Based on the above, Applicants respectfully submit that the cited references, taken individually or in combination, fail to disclose or suggest each and every limitation of the endoscope imaging system specified in amended independent claim 10. Amended independent claim 10 is therefore patentable over the cited references. Amended independent claim 11 is patentable over the cited references for at least similar reasons.

Claims 5, 6 and 9 depend from and include all of the limitations of amended independent claims 10 and 11, respectively. Accordingly, claims 5, 6 and 9 are patentable over the cited references for at least the reasons set forth above with respect to amended independent claims 10 and 11.

Withdrawal of the Examiner's rejection of claims 5, 6 and 9-11 under 35 U.S.C. §103(a) is respectfully requested.

Conclusion

In view of the above, Applicants respectfully submit that the subject application is in condition for allowance. Accordingly, Applicants respectfully request that the subject application be allowed and a Notice of Allowance issued. If the Examiner believes that a telephone conference with Applicants' attorneys would be advantageous to the disposition of this case, the Examiner is requested to telephone the undersigned.

Respectfully submitted,

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